

The Philips Respironics ASV targets the average peak flow, which is calculated over a 4-minute moving window. Similar to ResMed ASV, the EPAP serves to stabilize upper airway obstruction, while the IPAP max increases when the flow signal is below the target peak flow. If the flow target is reached, the device does not offer any additional pressure support or a minimum level of support if the IPAP minimum is slightly above EPAP. The Philips Respironics ASV device has two methods of setting a backup rate: a fixed rate determined by the operator, or an auto mode that synchronizes with the patient's intrinsic rate.

ASV targeted to normalize the apnea-hypopnea index (AHI) should not be used in adults with an ejection fraction $\leq 45\%$. ASV can be used in adults with an ejection fraction $> 45\%$.

(D) Procedure

Upon receiving an order for ASV with a qualifying diagnosis, the Sleep Lab will call and schedule the patient for an in-lab titration.

Note: It is recommended to have an entire night to accurately titrate a patient on ASV. If a patient fails CPAP and BPAP during a routine titration the sleep technologist will document findings and recommendations for the physician during his/her review. Additionally, all servoventilation orders must be written by a sleep physician and patients must have a Left Ventricular Ejection Fraction (LVEF) $> 45\%$ charted.

American Academy of Sleep Medicine (AASM) definitions for optimal, good, adequate, and unacceptable titration:

1. Optimal titration reduces the Apnea Hypopnea Index (AHI) < 5 for at least 15 minutes' duration and should include supine Rapid Eye Movement (REM) sleep at the selected pressure that is not continually interrupted by spontaneous arousals or awakenings.
2. A good titration reduces the AHI < 10 or by 50% if the baseline AHI is < 15 and should include supine REM that is not continually interrupted by spontaneous arousals or awakenings at the selected pressure.
3. An adequate titration does not reduce the AHI ≤ 10 but reduces the AHI by 75% from baseline (especially in severe OSA patients) or one in which the titration grading criteria for optimal or good are met with the exception that Supine REM did not occur at the selected pressure.
4. An unacceptable titration is one that does not meet any of the above definitions.

Training – If the patient has been on CPAP or BPAP, then it is up to the technician to assess whether ASV training is necessary, although generally it is recommended. Patients with a poor prior experience will typically benefit from training. Patient education and ASV training shall be performed in the same manner as specified by the **CPAP Titration Procedure**. During training (to be conducted on bilevel), the EPAP setting shall be maintained at its lowest level (i.e. 4 cm H₂O), while IPAP pressure shall begin at 8 cm H₂O, and be gradually increased to 10 cm H₂O at the end of the training session.

1. Explain test/expectations to the patient.
2. Set-up and inspect for minimalization of leak,
3. Add heated humidification using sterile water
4. Fit the patient with an interface and headgear.
5. Allow patient to test/feel pressure prior to starting hook-up.
6. Select ASV
7. Initial settings per ASV protocol-see attached
 - a. EPAP 5 cm H₂O
 - b. Minimum Pressure Support (Min PS) 3 cm H₂O
 - c. Maximum Pressure Support (Max PS) 15 cm H₂O
8. Follow the ASV flow chart, Refer to the attached algorithm,

- a. If EPAP reaches maximum, increase the Max EPAP for obstructive events 1 cm H₂O until obstructive events are resolved.
9. Chart all settings and patient tolerance.

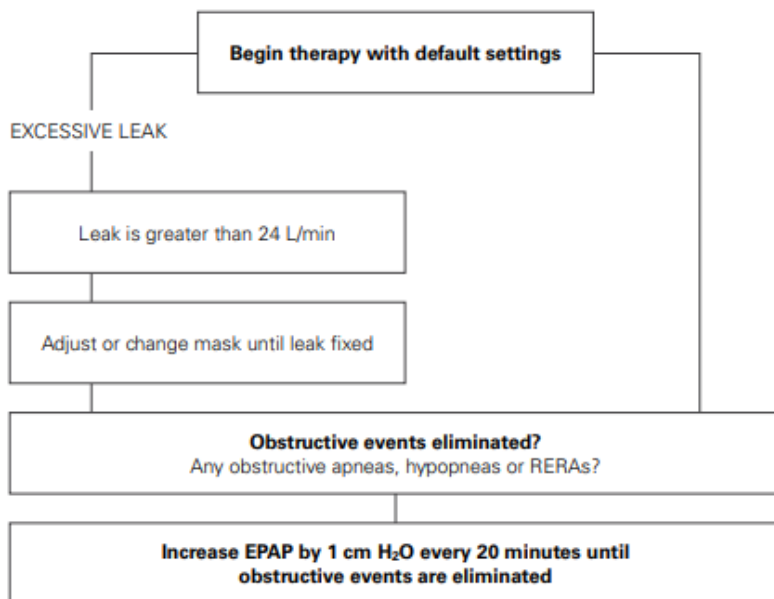
Components

1. Patient education
2. Patient hook-up
 - a. International 10-20 hook-up
 - b. Chin Electromyograph (EMG)
 - c. Eye Electrooculogram (EOG)
 - d. Anterior Tibialis leads right and left
 - e. Chest Respiratory Inductance Plethysmography (RIP) belts
 - f. Abdomen RIP belt
 - g. Oximeter
 - h. Snore microphone
3. Patient to bed
4. Lights out
5. Impedance check
6. Machine calibration
7. Patient calibration
8. Machine calibration
9. Lights on
10. Disassemble PAP device and remove all electrodes and process each for disinfection or disposal per policy.

Reference:
ResMed Sleep Lab Titration Guide 2017

See Procedure Adaptive Servo Ventilation Titration

ASV Titration Protocol



The guidelines below can help to set up and treat patients with central breathing disorders using the standard ASV mode in ResMed's adaptive servo-ventilation (ASV) devices. This guidance is intended for in-lab titration and should not supercede direction by a physician. For more details on therapy settings and adjustments, please refer to the Clinical Guide for the specific therapy device.

ASV default settings	
Only three therapy parameters to set	
EPAP	5 cm H ₂ O
Min PS	3 cm H ₂ O
Max PS	15 cm H ₂ O
Ramp	OFF

